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| Subject code & Name | : | **CE144 – Object oriented programming with C++** | Practical | : | **5** | Academic Year | : | **2022-2023** |
| ID | : | **22CS044** | Name | : | **Shruti Panchal** | | | |

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| ***Practical Set - 5*** |
| **Aim 5.1:** Write a C program defining Structure Rectangle with data member’s width and height. It has get values() member functions to get the data from user and area() member functions to print the area of the rectangle.  Also create a C++ Class for the above program. Define the data members and both functions inside the class. Get the area of the rectangle as an output.  **Expected Output:**  Fill the following table to showcase your outcome, also attach the screenshot of output**.**  **Result using C Structure**   |  |  |  | | --- | --- | --- | | **Inputs** | | **Output** | | **Height** | **Width** | **Area of Rectangle** | | 4 | 5 | 20.000000 |   Resulting using C++ class   |  |  |  | | --- | --- | --- | | **Inputs** | | **Output** | | **Height** | **Width** | **Area of Rectangle** | | 12 | 25 | 300 | |
| ***Code*** |
| C Structure:      C++ class: |
| ***Output*** |
|  |
| ***Question-Answers*** |
| **1. Differentiate between \n and endl in two points in below given tabular format:**   |  |  |  | | --- | --- | --- | | **Sr.no** | **\n** | **endl** | | 1 | It inserts a new line | It inserts a new line and flushes the stream (output buffer) | | 2 | It is supported by both C and C++ | It is only supported by C++ |   **Ans.** |
| **Aim 1.2:** Write a program to create the following table by making use of endl and setw manipulator   |  |  |  |  | | --- | --- | --- | --- | | **1** | **2** | **3** | **4** | | **2** | **4** | **6** | **8** | | **3** | **6** | **9** | **12** | | **4** | **8** | **12** | **16** | |
| ***Code*** |
|  |
| ***Output*** |
|  |
| ***Question-Answers*** |
| 1. **Explain any three manipulators in the below given tabular format.**  |  |  |  | | --- | --- | --- | | **Sr.No.** | **Manipulator** | **Description** | | 1 | Setw() | Used to set the field width in output operation. | | 2 | showpos | Forces to show positive sign on positive numbers. | | 3 | right | Adgusts output to the right. |   **Ans.** |
| **Aim 1.3:** Write a C++ program to add two floating numbers using pointer. The  result should contain only two digits after the decimal.  Note: Use fixed, scientific and setprecision() manipulators for  controlling the precision of floatingpoint numbers.  **Expected Output:**  **1.** Fill the following table based on the outcome you get by executing the functions in given sequence- fixed, scientific and setprecision(). Also attach the screenshot of output.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Sr.No.** | **Input 1 (in float)** | **Input 2 (in float)** | **Functions** | **Results** | | **1.** | **23.45** | **45.54** | **Fixed** | **68.990000** | | **2.** | **23.45** | **45.54** | **scientific** | **6.899000e+01** | | **3.** | **23.45** | **45.54** | **setprecision** | **6.90e+01** |   **Expected Output:**  **1.** Fill the following table based on the outcome you get by executing the functions in given sequence- scientific, fixed and setprecision(). Also attach the screenshot of output.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Sr.No.** | **Input 1 (in float)** | **Input 2 (in float)** | **Functions** | **Results** | | **1.** | **44.678** | **15.634** | **scientific** | **6.031200e+01** | | **2.** | **44.678** | **15.634** | **fixed** | **60.312000** | | **3.** | **44.678** | **15.634** | **setprecision** | **60.31** | |
| ***Code*** |
| Code 1:    Code 2: |
| ***Output*** |
|  |
| ***Question-Answers*** |
| 1. **Which ios class function will be responsible for setting the number of decimal places?**   **Ans.**  Setpricision is a function wil be responsible for setting the number of decimal places. |
| **Faculty Signature: Grade:** |